

## STATEMENT OF QUALIFICATIONS

### Marin Greenwood

**POSITION:** Senior Technical Specialist – ICF; Lead Fish Biologist, California WaterFix

**EDUCATION:**

Ph.D., The Fish Populations of the Lower Forth Estuary, Including the Environmental Impact of Cooling Water Extraction, University of Stirling, UK, 2002

M.S., Applied Fish Biology, University of Plymouth, UK, 1997

B.S., Aquatic Bioscience, University of Glasgow, UK, 1996

**PROFESSIONAL CERTIFICATIONS:**

American Fisheries Society Certified Fisheries Professional, Number 3450

**PROFESSIONAL EXPERIENCE:**

Aquatic Ecologist, California WaterFix (February 2015 to present)

- Lead Fish Biologist for the Endangered Species Act Biological Assessment and California Endangered Species Act 2081(b) Incidental Take Permit Application  
Developed effects analyses for listed fish and their designated critical habitat, with a focus on in-Delta effects.
- Fish Biologist, EIR/EIS Chapter 11, Fish and Aquatic Resources  
Assisted in the completion of the fish effects analysis for each EIR/EIS alternative, including response to comments and revisions to address comments and ensure consistency between Alternative 4A and Biological Assessment analyses.
- Miscellaneous tasks related to preparation and presentation of materials for peer-review panels, and review of draft NMFS and USFWS Biological Opinions and DFW Incidental Take Permit.

Aquatic Ecologist, Bay Delta Conservation Plan (February 2011 to December 2014)

Developed fish effects analysis, with particular emphasis on in-Delta effects, in addition to assisting with aspects of conservation plan development.

Aquatic Ecologist, Emergency Drought Barriers Project (March 2014 to October 2016)

Prepared ESA Biological Assessment and CESA 2081(b) ITP Application, including BA for the 2015 drought emergency action.

Aquatic Ecologist, Remanded State Water Project/Central Valley Project  
Biological Opinions (September 2013 to November 2015)

Prepared draft in-Delta effects analysis for the BA, prior to legal decisions upholding the 2008/2009 Biological Opinions for the federal CVP and State Water Project.

Aquatic Ecologist, Georgiana Slough Nonphysical Barrier Studies (October 2010-  
October 2016)

Prepared ESA BA and CEQA analyses, and contributed to study plan for 2011 Georgiana Slough nonphysical fish barrier. Conducted peer review of 2012 barrier study report (Bioacoustic Fish Fence). Contributed to study plan and served as principal investigator and author of analyses for predation and predatory fish effects of 2014 barrier (DWR 2016).

Aquatic Ecologist, Evaluation of Juvenile Salmonid Routing and Barrier Effectiveness,  
Predation, and Predatory Fishes at the Head of Old River (October 2010-March 2015)

Served as principal investigator and author for analyses for predation and predatory fish effects of 2009-2010 nonphysical barrier and 2012 rock barrier (DWR 2015).

**SELECTED PUBLICATIONS:**

California Department of Water Resources (DWR). 2016. 2014 Georgiana Slough Floating Fish Guidance Structure Performance Evaluation Project Report. California Department of Water Resources, Sacramento, CA.

California Department of Water Resources (DWR). 2015. An Evaluation of Juvenile Salmonid Routing and Barrier Effectiveness, Predation, and Predatory Fishes at the Head of Old River, 2009–2012. Prepared by AECOM, ICF International, and Turnpenny Horsfield Associates. April. California Department of Water Resources, Sacramento, CA.

Wilder, R. M., J. L. Hassrick, L. F. Grimaldo, M. F. D. Greenwood, S. Acuña, J. M. Burns, D. M. Maniscalco, P. K. Crain, and T.-C. Hung. 2016. Feasibility of Passive Integrated Transponder and Acoustic Tagging for Endangered Adult Delta Smelt. *North American Journal of Fisheries Management* 36(5):1167-1177.